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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,664	01/20/2004	William F. Van Ostrand	60,246-313; 10,857	9865
26/096 7590 01/31/2008 CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009				
EXAMINER				
JIANG, CHEN WEN				
ART UNIT		PAPER NUMBER		
3744				
MAIL DATE		DELIVERY MODE		
01/31/2008		PAPER		

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM F. VAN OSTRAND,
RAJENDRA K. SHAH and LAURIC L. WERBOWSKY

Appeal 2007- 3961
Application 10/760,664
Technology Center 3700

Decided: January 30, 2008

Before WILLIAM F. PATE III, TERRY J. OWENS, and
DAVID B. WALKER, *Administrative Patent Judges*.

WILLIAM F. PATE III, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal the rejection of claims 1-4, 6-13, and 15-17.
Claims 5 and 14 have been indicated by the examiner as being directed to
allowable subject matter. 1These are all of the claims in the application.

We have jurisdiction over the appeal pursuant to 35 U.S.C. §§ 6 and 134.

The claimed invention is a control system and method for use in a multizone HVAC system. The system has a central controller which receives zoned demand signals from the multiple zones. The central controller utilizes current ones of said zone control signals and at least a prior one of said zone control signals to determine the desired staging demand staging for the heating or cooling equipment.

Claim 1, reproduced below, is further illustrative of the claimed subject matter.

A control for an HVAC system comprising:

a central control for receiving a plurality of zone control signals providing information on a desired temperature and an actual temperature for each of a plurality of zones; and

said central control utilizing a current one of said zone control signals and at least a prior one of said zone control signals to determine a desired staging demand for an associated HVAC system.

REFERENCES

The references of record relied upon by the examiner as evidence of obviousness are:

Narikiyo	5,344,069	Sep. 06, 1994
Vanostrand	5,829,674	Nov. 03, 1998

REJECTION

Claims 1-4, 6-13 and 15-17 stand rejected under 35 U.S.C. § 103 as unpatentable over Narikiyo in view of Vanostrand.

PRINCIPLES OF LAW

A claimed invention is unpatentable if the differences between it and the prior art are “such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” 35 U.S.C. § 103(a) (2000); *KSR Int’l v. Teleflex Inc.*, 127 S.Ct. 1727 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 13-14 (1966).

In *Graham*, the Court held that that the obviousness analysis is bottomed on several basic factual inquiries: “[(1)] the scope and content of the prior art are to be determined; [(2)] differences between the prior art and the claims at issue are to be ascertained; and [(3)] the level of ordinary skill in the pertinent art resolved.” 383 U.S. at 17. *See also KSR*, 127 S.Ct. at 1734. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 127 S.Ct. at 1739.

While there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely

bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id., at 1740, 82 USPQ2d at 1396. We must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.*

OPINION

We will not sustain the rejection on appeal. The Examiner has cited Vanostrand to show what the Examiner calls the proportional plus integral (PI) control loop for determining desired damper position. This, according to the Examiner, is a teaching that using current and prior control signals is inherent in the PI control. In reality, the best teaching of Vanostrand is that of using the time weighted average for determining initial damper position. This is an example of using at least one prior signal to calculate an actual value for running a multizone system, albeit for damper position used in a single zone rather than for system demand.

In our view, the disclosure of Vanostrand would not have rendered the use of a prior signal or signals along with current zone signals obvious in the HVAC system and method disclosed in Narikiyo. First of all, in Vanostrand the calculation that uses prior signals is for a single zone, that is, for a damper that feeds the zone. There is no teaching that the prior zone signal would be useful in a summed system demand calculation let alone in a

staging calculation. Secondly, if the teachings of Vanostrand were to be applied to the system of Narikiyo, it is apparent that the result would be a system in which damper control and position were determined by the disclosed method of Vanostrand. This is what a fair reading of the combined disclosures teaches. Any other consideration of these combined teachings appears to us to be a hindsight reconstruction of Appellants' claimed invention.

We include the following remarks concerning the content of admitted prior art in the event of further prosecution. All this prior art is found in Appellants' Specification. First, we specifically note Appellants' disclosure that prior art multizone HVAC systems have used a constant multiplier in a stage control or stage selection algorithm. See Specification ¶0005. Next, we note Appellants' disclosure of a prior art single zone system that looks not only to a current demand, but also to the existence of a demand over time or the integral of the demand. Specification ¶0007. We believe this prior art to be more relevant than that cited by the Examiner in this Appeal. Left unsaid is the relationship of system demand calculated using demand over time as opposed to staging control using demand over time. It must further be noted that under *KSR*, use of known techniques to improve similar devices in the same way are likely to have been obvious to one of ordinary skill. See *KSR* at 1740.

CONCLUSION

The examiner has failed to make a *prima facie* case of obviousness by a preponderance of evidence with respect to claims 1-4, 6-13, and 15-17.

Appeal 2007-3961
Application 10/760,664

ORDER

The rejection of claims 1-4, 6-13, and 15-17 is reversed.

REVERSED

vsh

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